

AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings include changes to Figures 4-5. These sheets, which include Figures 4-5, replace the original sheet including Figures 4-5.

Attachment: Replacement Sheets (2)

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-8 are presently active in this case. The present Amendment amends Claims 1-7; and adds new Claim 8 without introducing any new matter.

In the outstanding Office Action, the title of the invention was objected to as not being descriptive, Figs. 4-5 were objected as not being labeled as background art under M.P.E.P. § 608.02(g), the abstract of the disclosure, the specification, and Claims 4-7 were objected to because of informalities. Claims 6-7 were rejected under 35 U.S.C. § 101, as being directed to non-statutory subject matter. Claims 1-7 were rejected under 35 U.S.C. §102(b) as anticipated by Mori et al. (“Industrial Application Experiences of New Type Flow-Metering Systems Based on Ultrasonic-Doppler Flow Velocity-Profile Measurement,” Conference Publication of the 3rd International Symposium on Ultrasonic Doppler Methods for Fluid Mechanics and Fluid Engineering, Ecole Polytechnique Fédérale de Lausanne (EPFL), September 2002).

In response to the objection to the Title, the Title is amended to recite “Ultrasonic Doppler System for Measuring Flow Velocity, and Flow Rate,” thereby being similar as suggested by the pending Office Action. The amended Title finds support at least in original Claim 1. No new matter has been added.

In response to the objection to Figures 4-5, submitted herewith is a Letter Submitting Drawing Sheets along with two (2) Replacement Sheets for Figures 4-5, adding the label “Background Art,” to thereby comply with the requirements of M.P.E.P. § 608.02(g). No new matter has been added.

In response to the objection to the Abstract of the Disclosure, the Abstract is herewith

amended to be in narrative form and not to exceed 150 words, and to be in a single paragraph.

The features of the Abstract find support in at least original Claim 1.

In response to the objection to the Specification in paragraphs [0008]-[0023] as including references to the claims, these paragraphs have been amended to delete these references. No new matter has been added.

In response to the rejection of Claims 6-7 as being directed to non-statutory subject matter under 35 U.S.C. § 101, these claims are amended to recite “A storage medium having a computer program product recorded thereon, the program configured to control an ultrasonic flowmeter,” to thereby be directed to statutory subject matter. These features find non-limiting support in Applicants’ disclosure as originally filed, for example in the specification at page 13, paragraph [0022]. No new matter has been added.

To correct minor formalities, to better comply with U.S. claim drafting practice, and to address the objections of Claims 4-7, Claims 1-7 are amended. In particular, Claims 4-7 are amended to be directed to proper method claims steps. Independent Claim 3 is amended to recite “manual adjustment data.” This feature finds non-limiting support in paragraph [0033].

In addition, new Claim 8 is added, depending from independent Claim 4, reciting features related to an inflection point. This feature finds non-limiting support in Applicants’ disclosure as originally filed, for example in original Claim 1. No new matter has been added.

In response to the rejection of Claim 1 under 35 U.S.C. § 102(b), Applicants respectfully request reconsideration of this rejection and traverse the rejection, as discussed next.

Briefly summarizing, Applicants’ Claim 1 is directed to an ultrasonic flowmeter to

measure a flow rate of a fluid. The flowmeter includes, *inter alia*: an ultrasonic transmitter for launching ultrasonic pulses into the fluid, a flow velocity distribution measuring unit for measuring flow velocity distribution of the fluid in a measurement region, and a flow rate operation unit for calculating a flow rate of the fluid in the measurement region based on the flow velocity distribution. Moreover, the flow velocity distribution measuring unit includes *inter alia* a graph output unit for outputting a flow velocity distribution graph displaying the flow velocity distribution in two axes of positions in the inner diameter direction, and an inner wall position calculating unit for calculating the position of the inner wall with respect to the axis in the inner diameter direction **by calculating its inflection point from the flow velocity distribution graph outputted by the graph output unit.**

Turning now to the applied reference, Mori is directed to a velocity profile measurement method by using an ultrasonic Doppler method, in contrast to background methods directed to electromagnetic flowmeters. (Mori, Abstract, Fig. 3.) The measurement principle is based on simultaneously measuring multiple points on the line of flow of a velocity profile, and that the line of measurement should be inclined at a certain angle. (Mori, p. 116-117, ¶ 2) In Mori's Fig. 8, a measured profile is shown, with lines at 12.574mm and 165.48mm. However, Mori fails to teach an inner wall position calculating unit for calculating the position of the inner wall with respect to the axis in the inner diameter direction **by calculating its inflection point from the flow velocity distribution graph outputted by the graph output unit**, as required by Applicants' Claim 1. Mori is entirely silent on such a feature, and merely shows lines at two different locations at a displayed profile. Mori also does not explain how these lines are determined, nor does it explain that an inflection point is used, being a point on a curve at which the curvature changes from convex

to concave or vice versa.¹

Therefore, Applicants respectfully traverse the rejection of Claim 1 based on Mori. In addition, independent Claim 6 recites similar features, but directed to a storage medium. Therefore, Applicants respectfully request reconsideration of the rejections of Claims 1-2 and 6.

Moreover, independent Claim 3 is directed to an ultrasonic flowmeter to measure a flow rate of a fluid, including *inter alia* a manual input data receiver for receiving ***manual adjustment data regarding an inner wall position*** with respect to the axis in the inner diameter direction; and an inner wall position calculating unit for ***calculating the inner wall position with respect to the axis in the inner diameter direction based on the manual adjustment data*** received by the manual input data receiver. (Claim 3, emphasis added, portions omitted.) As discussed above, Mori does not teach anything on a calculation of a inner wall position, and also fails to disclose anything related to an input of manual adjustment data. Independent Claims 5 and 7 recite analogous features in the context of a method (Claim 5), and a storage medium (Claim 7). Therefore Applicants respectfully traverse the rejection of Claims 3, 5 and 7, and respectfully request reconsideration thereof.

Moreover, independent Claim 4 requires *inter alia* a step of calculating the position of the inner wall with respect to the axis in the inner diameter direction. These features are also not taught by Mori, and accordingly, Applicants respectfully request reconsideration of this rejection.

¹ "inflection point." *Dictionary.com Unabridged* (v 1.1). Random House, Inc. 28 Aug. 2008. <Dictionary.com http://dictionary.reference.com/browse/inflection point>.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-8 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below listed telephone number.

Respectfully submitted,

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